07KN
Mid-America Refinery
KSD084691545
Break: 2.2
Other:
SRC 2-28-98

U.S. ENVIRONMENTAL PROTECTION AGENCY
SITE PROGRESS REPORT

I. HEADING

Date: February 28, 1998

From: Janice J. Kroone, On-Scene Coordinator
U.S. EPA, Region VII

To: Paul Nadeau, Director (5203G)
Regions 5/7 Accelerated Response Center

Subject: Mid-America Refinery Company (MARCO)
Chanute, Neosho County, Kansas

Report: #2

II. BACKGROUND

EPA/IAG Identification Number: RW69952132-01-0
FPN: 088040
Contract Number: 68-S7-7001
Order Number: 0013
Response Authority: OPA
State Notification: KDHE Notified
Date IAG Signed by Coast Guard: December 29, 1997
Date IAG Signed by EPA: February 3, 1998
Mob Date: February 17, 1998
Demobilization Date: N/A
Completion Date: N/A

III. SITE INFORMATION

A. Incident Category

Activities at this site are pursuant to Section 311 Federal Water Pollution Control Act (FWPCA), as amended by the Oil Pollution Act of 1990 (OPA), Public Law 101-380, in accordance with the National Contingency Plan (NCP).

This site is an inactive oil refinery located north of a residential area.

B. Site Description

1. The Mid-America Refinery Company(MARCO) located in Neosho County, Kansas, north of the city limits of Chanute, is a 25-acre abandoned oil refinery. This facility operated as a crude oil processor from 1934 until it was shut down in February 1981. During full production, MARCO processed approximately 2,800 barrels per day of crude oil stock. This stock was refined into diesel fuel, jet fuels, gasoline, oil and kerosene. The remaining crude bottom products were used to make asphalt.

Residential property lies immediately to the south and west of the facility and commercial properties border the east and north boundaries. Approximately ten residences and seven businesses are located across the street within 200 feet of the refinery. Surface runoff from the site flows into an ephemeral tributary, which empties into the east-west trending Village Creek, which is part of the Neosho River Basin. The Neosho River is the primary source of drinking water for the City of Chanute.

Portions of this site are located in a flood plain. Over the history of this site, flood waters have covered a portion of the property on at least four occasions. Most recently in the spring of 1994.

During the seventeen years the refinery has been closed, the tanks have continued to rust and degrade. No maintenance, corrosion control, leak testing, etc., has been done to maintain the integrity of these tanks. Old operation records of the refinery indicate throughout its operations a substantial amount of petroleum product had spilled or leaked out through poor operational practices or poorly maintained equipment, piping and tanks. Numerous tanks have no berms around them to serve as secondary containment in the event of any spills or tank failures. There is evidence in the oily water around some of the tanks that do have berms, that the tank contents have leaked out. This has caused extensive soil contamination around and under the tanks. Salvagers have further destroyed numerous tanks by cutting off tank tops and leaving product in the bottoms of the tanks, causing the contents to overflow onto the ground. None of the tanks on-site are serviceable due to their deteriorated condition.

2. Description of Threat

The deteriorated condition of the tanks and the eroded underground and aboveground piping, all of which still contain petroleum material, as well as the oil-contaminated soils continually discharge into an ephemeral tributary, which empties into Village Creek and eventually into the Neosho River, which is the habitat of the "Kansas Madtom," an endangered fish species. This discharge is considered a threat to public health and the environment.

Multiple threats are posed to human health and the environment from petroleum-based fires at the site. The most obvious hazards involved in petroleum-based fires is the intense heat, open flame and smoke inhalation. Fires can also mobilize and release a number of toxic compounds, which threaten both on-site personnel and persons living or working nearby. During previous sampling events, some of the tanks were found to contain explosive vapors; an explosion could be disastrous given the proximity of residences and businesses to the site.

Petroleum materials contain aliphatic hydrocarbons, paraffins, tars and aromatic hydrocarbon compounds. The health effects associated with petroleum are those of its associated hydrocarbon mixtures. The aliphatic hydrocarbons are less toxic than the aromatic hydrocarbons, such as the benzene-related compounds (benzene, ethyl benzene, toluene, and xylene). Among the aromatic compounds also are a group known as the Polycyclic Aromatic Hydrocarbons (PAHs), which may cause skin and eye irritation. Some, such as benzo(a)pyrene, are carcinogenic. Dermatitis, eye irritation, liver and kidney damage, central nervous system effects, hematopoietic effects, and carcinogenic effects are generally associated with the aromatic constituents of petroleum.

Another chemical of particular concern at this site is benzene. Benzene is a natural component of crude oil and refined petroleum products. Benzene can enter the human body when breathing contaminated air, when ingesting contaminated food or water, and by skin contact with contaminated environmental media. Benzene is a known human carcinogen. Benzene has numerous adverse health effects, including cancer, leukemia, aplastic

anemia, chromosomal damage, blood-forming cell decrease, embryonic death, arrhythmia, and nausea.

Benzene is partially soluble in water, can be carried by precipitation deep into the soil and can contaminate underground water. The Maximum Contaminant Level (MCL) for this compound is 5 micrograms per liter (ug/l) in drinking water. There is a 1 E-4 cancer level of 100 ug/l, which is the level at which one person out of 10,000 is expected to develop a carcinogenic response in excess of that expected in the population. Use of the groundwater for domestic purposes can cause adverse health effects by ingestion when used for drinking or cooking purposes; dermal contact and absorption from bathing or showering; or inhalation from breathing the volatilized vapor from benzene entering the home by showering or cooking activities.

Other components of petroleum products include ethyl benzene, toluene and xylene.

Ethyl benzene causes adverse reproductive effects, and is a skin and eye irritant at high concentrations.

Toluene can cause decreased fetal weight and embryonic death. Acute exposure may produce central nervous system depression, narcosis and cerebellar degeneration.

Xylene affects the central nervous system and irritates mucous membranes at high concentrations.

C. Previous Site Actions

1. Investigative History

The Kansas Department of Health and Environment (KDHE) conducted a preliminary assessment/site investigation (PA/SI) of the site in 1986. Field work associated with the PA, conducted on February 2, 1986, visually identified several areas of possibly contaminated soil near the oil/water separator unit and pools of hydrocarbons, apparently from leaky valves and/or pipes, scattered throughout the site.

Field work associated with the SI, conducted in September 1986, included ambient air monitoring for organic vapors and

explosive atmospheres; installation of four on-site monitoring wells; ground water well sampling; limited sampling of on-site soil, sediment and sludge; and surface water sampling. The SI did not include an assessment of the buildings or their contents. The SI indicated that groundwater contamination, composed of refined petroleum products, was migrating in a southeastwardly direction, following the groundwater flow beneath the site. On-site surface water runoff flowed easterly, toward Highway 169, and accumulated along the eastern edge of the property. Surface water samples indicated the presence of hydrocarbons. Surface soil contamination was visible throughout the site; analysis indicated soils in stained areas to be heavily saturated with hydrocarbons.

In conjunction with the SI, a tank evaluation survey was conducted by KDHE. The survey indicated approximately 40 percent of the tanks had inadequate secondary containment.

On October 9, 1992, KDHE visited the site and conducted a limited inventory of potentially hazardous substances remaining in the on-site buildings. Results indicated that numerous marked and unmarked containers holding various substances were located throughout the buildings. Many hazardous substances, including corrosives, flammables and poisons were found. Buildings were in a dangerous state of decay and fully accessible to the public. Fencing at the site was inadequate and in some areas in a state of disrepair.

On November 16-18, 1992, EPA and Ecology and Environment's Technical Assistance Team, conducted a site assessment. The assessment included documentation of site conditions; an inventory of all containers inside buildings; collection of ground water samples from on-site monitoring wells; surface water samples from an off-site drainage ditch and from the oil/water separator system; and soil, debris, sediment and sludge samples from the site. Field screening found asbestos materials in pipe wrap and tank insulation. The assessment found that excessive runoff and pools of oily water were observed throughout the site during heavy precipitation. Floor sweepings composited from floors of the on-site laboratories found extensive mercury contamination. Most of the abandoned drums found on-site were rusted and leaking. Materials in the drums were found to be RCRA hazardous waste. No PCBs were detected in samples collected on-

site. Volatile organic compounds (VOCs) associated with petroleum products were detected in the ground water sample, with benzene showing the highest concentration at 972 ug/l. On-site soil and sludge samples collected from the holding pond indicated total petroleum hydrocarbons (TPH) with the highest concentration of 165,400 milligrams per kilogram (mg/kg).

2. Past removal actions

On July 9, 1994, an action memorandum was signed by EPA. EPA began the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) clean-up in August 1994, and the action was completed in March 1995. This removal cost approximately $1,192,731.

IV. RESPONSE INFORMATION

A. Situation

1. Current Situation

This pollution report (POLREP) covers the period from February 22-28, 1998. Temperatures this week have been in the high 50s to low 60s.

A telephone interview with Kris Knowles of the Chanute Tribune was provided. A news article on the site was published in the February 25, 1998, edition of the Chanute Tribune.

The Chanute Fire Department presented training to site personnel on petroleum fires and the precautions to take when working around petroleum products.

Two personnel from KDHE visited the site on February 25, 1998.

Mr. Bob Moore, the trustee for the Robert Cooley Trust, called the site and inquired about EPA presence on the site. Anticipated removal actions were explained to him. Mr. Moore inquired about EPA's disposition of the scrap metal from the tanks. It was explained to him any monies received from the scrap metal would go back into the project budget. Mr. Moore requested a letter notifying him of actions EPA would be taking

on-site. When asked for a phone number where he could be contacted, Mr. Moore stated he did not have one. This phone conversation was relayed to EPA Counsel.

2. Removal Activities to Date

Tanks 20, 38, 47, 60, 65, 66, 67, 68, and 77 have been taken down and removed to a staging area. All were in deteriorated condition.

Thick brush and trees located in the tank berm areas, roadways, etc., have been removed for access to the tanks.

Water from the tank berms continues to be vacuumed and hauled to the holding pond.

The rock pad and roadway for the Springfield Belle has been completed.

The bermed area around tank 47 was fairly dry, however when the excavator with shears attachment moved into the berm area to begin tank removal, the excavator sunk six feet into the soil /sludge around the tank. This soil/sludge is heavily contaminated with petroleum products to at least six to seven feet. After the excavator was moved out of the area, reddish-brown water quickly filled in the hole.

The site has been divided into nine zones. Pipes in zones 2, 3, 4, 8, and 9 have all been drilled and checked to see if they contain petroleum material. All piping has been spray painted with a color code to indicate piping that contains liquid.

3. Enforcement

In May 1993, the Robert Cooley Trust purchased the MARCO site. Robert Moore is presently the trustee. In 1994, EPA attempted to negotiate with the current owners of the site for a Consent Order in which they would undertake all time-critical removal actions necessary at the site. Negotiations for the Responsible Party (RP) to perform the clean-up were unsuccessful, therefore EPA conducted a CERCLA time-critical removal from August 1994-November 1994. In March 1995, the original action

memorandum was amended to include disposal of ignitable hazardous waste from a tank. The PRPs were once more contacted to perform that portion of the removal. The PRPs again refused and EPA performed the remaining removal action.

On October 28, 1996, EPA issued a Unilateral Administrative Order, ("UAO"), pursuant to Section 7003 of the Resource Conservation and Recovery Act, ("RCRA"), 42 U.S.C. 6973, to Respondents requiring them to cease their current activities at the site related to the dismantling of tanks and piping, and requiring them to install a fence around the site, inventory all tanks and piping and prepare a plan for EPA approval to safely dismantle all existing tanks and exposed piping at the site. EPA took this measure only after determining there may be an imminent and substantial endangerment to human health and the environment because of the release and discharges, or threatened release and discharges, of oil and hazardous and/or solid waste from the site.

In March 1996, EPA requested assistance from the Department of Justice in enforcing the 7003 Order, and potentially obtaining a Temporary Restraining Order (TRO). In April 1996, a Department of Justice (DOJ) attorney visited the site, interviewed the fire department, EPA and KDHE personnel. DOJ concluded that since no salvaging operations were ongoing at the time, DOJ would not pursue the TRO.

B. Next Steps

Tanks will continue to be removed from their present locations to a staging area. Metal will be removed from the site to gain access to contaminated soils. Metal recyclers are being contacted for removal of metal from site. Any monies received from this effort will go back into the project budget.

All underground and above ground piping will continue to be checked to see if they still contain petroleum material. Piping found to contain material will be marked to ensure appropriate caution will be taken when tanks are removed around this piping to ensure no material is spilled from the piping.

Water located in the tank berm areas will continue to be vacuumed up and hauled to the holding pond.

Options for tank contents removal and disposal are being investigated.

The Springfield Belle will be transported to the site from EPA Region V.

It is anticipated that petroleum contaminated soils will be excavated, solidified and disposed off-site.

The site will be regraded and reseeded to control water runoff from the site.

C. Key Issues

When EPA conducted the CERCLA removal action in 1994, asbestos removal was completed on all visible asbestos on tanks, pipes and on the boiler structure. The boiler at that time was not dismantled, the only known area containing asbestos that was left onsite, were the gaskets around the boiler doors. These were labeled as containing asbestos and the doors to the structure were labeled and boarded up to limit access into the building. Salvagers demolished the building and removed a significant amount of metal from the boiler structures. In doing so, the skin of the remaining structure was ripped open revealing suspected Asbestos Containing Material (ACM). This material is open to the environment and can easily become airborne. This material was sampled and field screening indicated asbestos. This material will be sent to a laboratory for confirmation. An action memorandum will be completed addressing the removal of the remaining asbestos. As a temporary measure, this material has been covered and secured to eliminate any further release.

V. COST INFORMATION (as of February 27, 1998)

A. Extramural Costs

1. ERRS Contractor

Current Amount in Delivery Order	1,719,880
Costs to date (not including awaits)	79,733
DELIVERY ORDER CEILING BALANCE	1,640,147

PERCENT OF ERRS FUNDS REMAINING	95%

2. START Contractor

Current Ceiling	285,120
Costs to date	9,233
CEILING BALANCE	275,887
PERCENT OF START FUNDS REMAINING	97%
TOTAL EXTRAMURAL CEILING	$2,005,000
TOTAL EXTRAMURAL COSTS TO DATE	88,966
TOTAL EXTRAMURAL CEILING BALANCE	$1,916,034

B. Intramural Costs

Current Ceiling	188,640
Actual Costs to date	3,838
TOTAL INTRAMURAL CEILING BALANCE	$184,802
TOTAL PROJECT CEILING FROM COAST GUARD IAG	$3,536,290
TOTAL EXTRAMURAL AND INTRAMURAL COST TO DATE	92,804
TOTAL PROJECT CEILING REMAINING	$3,443,486

The above accounting of expenditures are an estimate based on figures known to the EPA OSC at the time this POLREP was written. It reflects EPA costs incurred on-site.

VI. DISPOSITION OF WASTE

No materials have been removed from the site at this time.

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